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AUTHOR	Robinson, Daniel D.
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ABSTRACT

Understanding the financial reports of colleges and universities has long been a problem because of the lack of comparability of the data presented. Recently, there has been a move to agree on uniform standards for financial accounting and reporting for the field of higher education. In addition to comparable data, the efforts to make financial reports more understandable require the use of other kinds of statistical data which, when related to financial data, make interpretation, analysis, and understanding of financial data easier to achieve. It must, at all times, be remembered that an educational institution does not have the same characteristics as a business enterprise. Financial statements must be written in language understandable to the lay person, and must take into account that the institutions employ three major resources: money, people, and facilities. These resources have meaning in relation to the primary functions of the institution: instruction, research, and public service. Finally, financial data should be reported in absolute and relative terms, i.e., a year-end balance sheet with the totals of revenues and expenditures; and a comparison with a standard, norm, guideline, forecast, prior year, or other point of reference. The use of relationships in analysis and interpretation of the data enables the reader to judge the relative financial health of the institution. (JMF)

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Analysis and Interpretation of Financial Data

by Daniel D. Robinson

Colleges and universities now have available three publications that are in agreement in presenting uniform standards for financial accounting and reporting to the field of higher education. These references are, in order of their publication dates, the AICPA guide *Audits of Colleges and Universities,* Part 5 of NACUBO's Administrative Service and of the third edition of *College and University Business Administration,* and the NCHEMS *Higher Education Finance Manual.* The first is directed primarily to auditors, the second to institutional business officers, and the third to others interested in higher education financial information, such as planning officers, budget officers, and other managers.

Because so many persons are involved in higher education, as well as independent auditors and other interested parties, there is a high probability that colleges and universities will conform to the new standards. Thus, there is good reason to hope that the lack of comparability among published financial statements of institutions of higher education is about to end. Since this lack has been largely responsible for a failure of understanding—even incredulity—on the part of readers of financial statements, comparability among such statements of different institutions will be an important tool in helping readers to analyze and to interpret the financial affairs of a single institution or group of institutions.

Need for Financial Indicators

Comparability of financial statements, however, is only a beginning in the efforts required to make financial data more understandable. Much more needs to be done, as is attested to in the report of the National Commission on the Financing of Postsecondary Education. Chapter 5 of that report suggests some avenues of inquiry and interrelationships with other kinds of statistical data which, when related to financial data, would make interpretation, analysis, and understanding of financial data easier to achieve. But much more is needed in the way of concrete suggestions for specific data, data relationships, ratios, and other criteria that might be useful in assessing institutional financial health.

Borrowed Ratios Not Applicable

The absence of a common body of financial ratios, which have been used widely as indicators of financial health or distress, has led to some peculiar, though understandable, efforts at overcoming this lack. Attempts have been made to use stereotyped financial ratios used in some business enterprises for analyzing college and university financial reports. Since business enterprises do not use fund accounting, and since they are concerned with net income or loss for the year, the borrowed ratios do not fit. Rather than seek new ratios or relationships that are characteristic of institutions of higher education, some have tried to recast college or university financial statements so that they look like those of a business enterprise. The attempt then is made to apply the business enterprise type of ratios to the revised financial statements. The results, of course, are useless.

For years, college and university administrators have sought to emulate the business entrepreneur by summing it all up in one figure that "tells the whole story," as some believe to be true of the net income figure of the business enterprise. The resulting reported "deficits" (never "surpluses") have served more than anything else to put the users of college and university financial statements on the defensive. Such inept and simplistic attempts at interpretation and analysis of financial data are foredoomed. Perpetuation of such techniques is dangerous and counterproductive.

Rather than criticize, however, this article attempts to approach the problem with some constructive, concrete suggestions. Before citing any specifics, a few general observations are necessary. First, colleges and universities

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are complex institutions; hence, both their operations and their financial affairs are complex. No amount of spoon-feeding or popularizing is going to change that fact.

Understanding Financial Statements

Secondly, the language of finance is a special language, and it takes some getting used to. The lay person who has never learned such language cannot and should not be expected to understand financial statements. The special language of financial reporting is a kind of shorthand. Single words and short phrases are used to convey complex thoughts about involved transactions; it would be impractical to present financial statements in any other way. This does not mean that it is impossible to present financial data in terms that most persons will understand; it only means that financial statements, presented without extensive elaboration, probably are not ever going to be completely comprehensible to most readers. But one can try to convey some understanding to an increasingly larger proportion of one's audience, to shed a little more light on some murky, confused transaction, or to establish some limited rapport between reporter and reader for a brief period.

A third observation is that financial data constitute a one-dimensional expression in a multidimensional environment. Money is only one of three major resources employed by institutions of higher education; the others are people and facilities. All three resources have meaning not as ends in themselves, but only in relation to the primary functions of the institution: instruction, research, and public service. Institutional programs have little meaning without consideration of the students and public they seek to serve. Understanding financial data, then, usually will require some interaction with data about these other phenomena, which breathe life into the financial affairs of institutions of higher education.

Institutional Interaction Necessary

A prime example of this kind of interaction is the increasing concern of college and university administrators and public and private funding sources with the relationship between the outputs of an institution of higher education and the resources it employs in achieving those results. Techniques for the computation of costs per student, costs per credit hour, costs per degree granted, and other relationships of resources used to services rendered have been studied in higher education for half a century. The costing methods and procedures developed by the National Center for Higher Education Management Systems (NCHEMS), currently being examined by the Costing Standards Committee of the National Association of College and University Business Officers (NACUBO), are a case in point. The NCHEMS *Cost Analysis Manual* is intended to provide institutional administrators with a method of calculating the full cost per unit of service, which could be used for certain internal management purposes and for certain types of public reporting.

There should be an end to the compartmentalization of functions and attitudes in colleges and universities that has fostered the practice of keeping the treasurer's report devoid of useful programmatic information and the president's report naked of reliable financial information. When administrators of colleges and universities perceive themselves as part of a total institution, their reports will reflect the change in attitude and will be better for it.

Absolute and Relative Reporting

A final observation concerns the concept of reporting in absolute and relative terms. The basic financial statements and many supporting schedules published each year set forth economic data in absolute terms. For example, the balance at year-end in the balance sheet and the totals of revenues, expenditures, and other changes for the year are expressed in absolute terms, as so many dollars for each category, source, function, or fund. Expressing economic values in relative terms implies comparison with a standard, norm, guideline, budget, forecast, prior year, or other point of reference. Analysis and interpretation of financial data require the use of relationships, expressed or implied, in arriving at judgments.

The difference between reporting in absolute and relative terms can be illustrated by considering the difference between a thermometer and a thermostat. Both use the same scale of measurement, expressing the presence of heat in Fahrenheit or centigrade scales. The thermometer simply indicates the temperature, and stops there. The thermostat goes beyond, by effecting a change in temperature in accordance with what the temperature is as compared with preset instructions. What we are concerned with, then, is how to set the thermostat. What constitutes "too cold" or "too hot" is the problem to be solved.

To carry the analogy one step farther, it generally is known that comfort in a room depends on more than air temperature. The amount of moisture in the air and the velocity of air circulation also have important effects. So does evenness of heat distribution. Similarly, in analyzing the financial status of an institution of higher education, many different measures must be used in reaching a conclusion.

The ability to judge the relative financial health of an institution is of more than academic interest to independent public accountants who examine institutional financial statements. Most audits call for the expression of an opinion as to whether the financial statements present certain information in accordance with generally accepted accounting principles. Inherent in the application of these principles is the assumption that an institution is a "going concern" and that certain concepts may be applied such as historical cost as a carrying value of plant assets, the

accrual of revenues and expenses, the deferral of unexpired costs to future accounting periods, and the normal realization of receivables. If an institution is in serious financial difficulty or may be in immediate danger of insolvency or bankruptcy, then the "going concern" assumption must be set aside, and with it the accounting principles cited. In this extreme financial condition, the user of the statements would be more concerned with liquidation values and the relative standing of different classes of creditors.

Drawing on "going concern" considerations and experiences with colleges and universities, accountants have developed analytical tools to help in coming to conclusions about these and related matters. One such tool calls for the accumulation of a significant amount of detailed statistical and financial data over a period of several years. The purpose of this analysis is to discern trends of various activities that may indicate potential financial difficulty.

Below is a list of trends considered to be financial warning signals that illustrate the type of quantitative, objective data which, by themselves or when related to other data, can be useful in interpreting the relative financial health or distress of an institution. This list is not complete, nor will any one of these trends necessarily lead to financial distress. The trends are all worded so that a "yes" answer indicates a bad trend or condition.

Selected Financial Warning Signals

Admissions
- Decreasing number of inquiries
- Decreasing number of applications
- Decreasing proportion of total applicants who meet present academic entrance requirements

Registration
- Declining proportion of admitted students actually registering
- Declining student enrollment
- Declining enrollment in certain program areas
- Increasing percentage of enrollment in high-cost programs

Student Aid Expenditures
- Increasing amount of unfunded student aid expenditures
- Increasing percentage of unfunded student aid expenditures
- Rising percentage of student aid expenditures to total revenues from student fees and tuition

Academic Administration
- Declining teaching loads
- Declining average number of students per section
- Declining student-faculty ratio
- Rising number of course sections to FTE students

Balance Sheet
- Decreasing amount of unrestricted current and quasi-endowment funds
- Increasing percentage of receivables to total billings
- Increasing amount of total receivables
- Increasing reliance on interfund borrowing from current funds for plant expenditures
- Increasing reliance on interfund borrowing to meet working capital needs in unrestricted current funds
- Decreasing value of endowment funds per FTE student
- Increasing amount of payables

By reviewing this list of financial warning signals, one easily can determine the various kinds of statistical data, in addition to financial data, required by an analyst. These data almost always are available somewhere in the institution, but not necessarily in the controller's office. The registrar's office is a gold mine of information that should be utilized liberally. Correlation of statistical and financial data will be facilitated by the close working relationship between registrar and controller.

Other Approach to Cost Analysis

Of interest in this regard is another NACUBO-sponsored project, one that is under the leadership of its Accounting Principles Committee, with foundation funding. A faculty group from Brigham Young University has been conducting an empirical study of the needs of users of college and university financial reports. In addition to identifying many of the types of data referred to earlier, preliminary results of the study indicate the need to identify and report the variable cost of particular programs and the variable revenues they generate. The study calls for the segregation of costs between fixed and variable components so that the effects of prospective program decisions can be evaluated. This approach to cost analysis is quite different from the NCHEMS full-cost approach and calls for different analytical techniques, yet uses much of the same raw material in the form of objective, quantifiable data. The need for this kind of information and its relation to full-cost data also are emerging as important elements in the analysis of the NCHEMS *Cost Analysis Manual* referred to earlier.

The development and presentation of these more sophisticated analyses will have to await the development of appropriate techniques for their preparation. In the meantime, certain simple relationships should be set forth in any well-prepared financial statement. The balance sheet should be presented in comparative form, showing current fiscal year-end amounts compared with those for the same date a year earlier. Rather than indicate last year's figures

Daniel D. Robinson *is a partner in the New York office of Peat, Marwick, Mitchell & Co. He is a member of NACUBO's Accounting Principles Committee and was chairman of the AICPA Committee on College and University Accounting and Auditing, which developed the guide,* Audits of Colleges and Universities. *Mr. Robinson holds a B.S. degree in accounting from New York University, where he also served as vice president for business management.*

in absolute terms, consider showing the difference between this year and last year; the reader is thus relieved of much mental arithmetic. Similarly, the statement of current funds revenues, expenditures, and other changes can show the difference between this year and last rather than last year's actual amounts.

A columnar statement of changes in fund balances presents a problem in making comparisons, simply because of its physical arrangement. There is a way to expand that statement, which can quickly portray some very useful relationships. At the bottom of the statement, add four more lines with side captions as follows:

Unrestricted
Restricted expendable
Restricted for investments and loans
Net investment in plant

The year-end balance in each column of the statement of changes in fund balances can be subdivided according to the side captions. Four more lines then can be added with the same four side captions, and on these lines the net increase or decrease in fund balances for the year by type and by column can be shown. Although crossfooting of columnar financial statements in fund accounting is not usually desirable, some interesting and useful totals could be displayed by [illegible]ing the last-mentioned eight additional lines.

A final observation about financial statements and their interpretation: by the time most colleges and universities are ready to publish their financial report for the year just ended, they are in possession of key information about the new fiscal year, which would be useful to the reader. First, the operating budget usually is approved for the new year. Second, actual enrollment, or something very close to it, is known for the first term of the new year. Other particular happenings subsequent to the balance sheet date also may have occurred that are important financially. Sharing these facts with the reader enables the institution to present financial data that is up-to-date and useful to the reader in assessing the financial affairs of the institution.

Much can be learned from studying the financial reports of other institutions. Good reports will demonstrate how others have moved to fill this informational need. Poor reports will be object lessons in how not to do it; but more important, they will serve as reminders of what may be missing from one's own financial report.

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